REMARKS/ARGUMENTS

Claims 1-28 are pending.

Claims 1, 8, 14, and 20 have been amended.

Claims 27-28 have been added.

Support for the amendments is found in the claims and specification, as originally filed. Specifically, support for claims 1 and 14 can be found at page 7, lines 1-7; support for claims 27-28 can be found at page 51, Table 1. Claims 7 and 20 are amended to correct a clerical error. No new matter is believed to have been added.

The rejection of claims 14-26 under 35 U.S.C. 12, second paragraph, is not applicable to the claims presented herein as claim 14 is amended.

The rejection of claims 14-26 under 35 U.S.C. 102(b) or 103(a) over Moczygemba, US 5,393,838 (Moczygemba II) is traversed because Moczygemba II does not describe or suggest:

selecting the claimed block copolymer mixture comprising block copolymers comprising 65 to 75 mass% of a vinyl aromatic hydrocarbon and from 25 to 35 mass% of a conjugated diene as monomer units, wherein each polymer block S1, S,2, and S3 consisting the vinyl aromatic hydrocarbon as monomer units is directly attached to the conjugated diene polymer block B; the polymer blocks S1, S2, and S3 do not contain the conjugated diene polymer block B; and the conjugated diene polymer block B does not contain the polymer blocks S1, S,2, and S3 (see claim 14).

Moczygemba II describes block polymers having at least one conjugated diene with at least one monovinylarene block and at least four random-tapered blocks (col. 2, lines 35-41) prepared by charging styrene two times followed by charging a mixture of styrene and butadiene, and then butadiene (e.g., total (i) steps, Table 1). The sequence of the

Moczygemba II charging and, therefore, structure of the block polymers is different from that of the present invention. Thus, Moczygemba II does not anticipate the claimed block polymers.

Also, morphology and/or physical properties of the claimed polymers are different because the polymers have different structure. Moczygemba II teaches that the tapered copolymers provide high impact strength and environmental stress resistance (col. 1, lines 25-28). In the present application, the molecular weight distribution/ratios of a vinyl aromatic hydrocarbon block within the claimed range provides excellent transparency, impact resistance and mixing properties with another thermoplastic resin (pages 1-3 of the present specification). Moczygemba II does not describe a specific relationship regarding the molecular weight distribution/ratio and effects thereof. Moreover, it is impossible to compare the molecular weight of polystyrene chains because the copolymers described in Moczygemba II (e.g., tables 6 and 7) are different. Therefore, it is impossible to easily obtain the claimed block polymers from the disclosure of Moczygemba II.

Thus, Moczygemba II does not make the claimed block polymers obvious.

Applicants request that the rejection be withdrawn.

The rejection of claims 1-3 under 35 U.S.C. 103(a) over Moczygemba, US 5,705,569 (Moczygemba I) is traversed because Moczygemba I does not teach:

(1) selecting a block copolymer mixture comprising block copolymers comprising 65 to 75 mass% of a vinyl aromatic hydrocarbon and from 25 to 35 mass% of a conjugated diene as monomer units and satisfying the claimed molecular weight distribution, M1/M3 and M2/M3 ratios, and the claimed peak top molecular weight, wherein all monomer units are charged as pure monomers and each charge is completely polymerized before the addition of the subsequent charge (see claim 1), and

(2) selecting the claimed block copolymer mixture comprising block copolymers comprising 65 to 75 mass% of a vinyl aromatic hydrocarbon and from 25 to 35 mass% of a conjugated diene as monomer units, wherein each polymer block S1, S,2, and S3 consisting of the vinyl aromatic hydrocarbon as monomer units is directly attached to the conjugated diene polymer block B; the polymer blocks S1, S2, and S3 do not contain the conjugated diene polymer block B; and the conjugated diene polymer block B does not contain the polymer blocks S1, S,2, and S3 (see claim 14); and, in addition,

(3) Moczygemba I teacxhes away from the claimed content of the conjugated diene.

Moczygemba I discloses a general process for obtaining a large number of block copolymers (col. 2, lines 8-27; and col. 8, lines 9-29) but specifically teaches copolymer blocks that are differ from those claimed (see embodiments 1-4 in Tables 1-23 and the Examples).

As known in the art, morphology and/or physical properties of block polymers are different depending upon, e.g., molecular weight of a hard segment/soft segment, composition ratio and/or compatibility.

The block copolymers of specific embodiment 3 (the only embodiment wherein the conjugated diene polymer block B is charged as a pure monomer) in Moczygemba I have a different structure and, therefore, different properties from that claimed polymer because the Moczygemba I copolymers are prepared by a different method (see Table 3). In embodiment 3, styrene is charged four times followed by charging butadiene (see Table 3).

Table 7 describing producing a polymer of embodiment 3 is incorrect because two separate steps, i.e., step (d) and (e) of Table 3, are combined in one step (d) (see Tables 3 and 7).

Further, Table 19 describing specifically the steps of embodiment 3 has an error. In step 5, the content of butadiene is "0.5 phm." However, it is incorrect (the content of

butadiene should be 15 mass %) because Moczygemba I discloses that the copolymers contain 5-25 mass % (see Table 7) of conjugated diene monomers. Also, embodiments 1-2 use 15 mass % of butadiene and 15 mass % of styrene, which should be the same as in embodiment 3 which uses 15% of styrene.

Moreover, Moczygemba I generally describes that the butadiene content is 5-45 mass %, but specifically describes co-polymers having a different content of butadiene, i.e., 5-25 mass % with the preferred range of 10-20 mass % and 13-17 mass %, 15 mass %, and 7 mass % (see Table 7 and Tables 14-17 and 21). Moczygemba I does not describe or suggest selecting 25-35 mass % of butadiene in the copolymers. Comparative Examples of Table 23 comprise 25 mass % of butadiene which does not provide a copolymer with the satisfactory properties, i.e., haze, impact strengths (see col. 27, line 59 to col. 28, line 30 and Table 24). Thus, Moczygemba I teaches away from the claimed copolymers.

In the present invention, the content of butadiene in the polymer is from 25.3 mass % to 31.2 mass % (see Examples 1-7) and, therefore, is different from that of Moczygemba I. Further, the block copolymers are obtained by charging styrene three times followed by charging butadiene (table 1), wherein all monomer units are charged as pure monomers and each charge is completely polymerized before the addition of the subsequent charge (pages 30-37 of the present specification). Page 7 of the specification discloses that the claimed content of the polymer blocks provides favorable balance of physical properties such as impact resistance, transparencly and moldability. Also, each polymer block S1, S,2, and S3 consisting the vinyl aromatic hydrocarbon as monomer units is directly attached to the conjugated diene polymer block B; the polymer blocks S1, S2, and S3 do not contain the conjugated diene polymer block B; and the conjugated diene polymer block B does not contain the polymer blocks S1, S,2, and S3. Thus, the claimed block polymers have different structure (and therefore properties) from that specifically taught by Moczygemba.

The Examiner is of the opinion that block polymers having the claimed molecular weight distribution/ratio would be inherently produced based on the data of Table 5 of Moczygemba I. However, Table 5 describes block polymers of embodiment 1 having tapered or random structure, the compatibility of which is inferior compared to the claimed block polymers. Because the claimed and the Moczygemba I copolymers are different, it is impossible to compare the molecular weight of polystyrene chains. Therefore, the claimed property is not inherent to the Moczygemba I block polymers having different structure and characteristics.

Also, it is impossible to easily obtain the claimed block polymers from the disclosure of Moczygemba I, especially taking into account the incorrect data of Tables 7 and 19 improperly describing the only embodiment possibly reminiscent, if at all, of the claimed block copolymers. In the present application, the molecular weight distribution/ratios of a vinyl aromatic hydrocarbon block such as styrene within the claimed range provides excellent transparency, impact resistance and mixing properties with another thermoplastic resin (pages 1-3 of the present specification). Particularly, in the form of an injection molding, it is possible to extremely improve the impact resistance without deteriorating transparency (pages 3 and 5; the Examples).

A goal of Moczygemba I is to balance impact strength and ductility of an article prepared from the described block polymers (col. 1, lines 19-50). Further, structure of the specifically disclosed Moczygemba I block polymers is different. Also, a specific relationship regarding the molecular weight distribution/ratio and effects thereof is not disclosed by Moczygemba.

In addition, Moczygemba I does not teach that the block polymers mixture comprises 65-90% of the branched block polymers (see present claim 2) and the proportion of S1 to the total number of S1, S2, and S3 is from 2 to 30% (present claim 3).

Thus, Moczygemba I does not make the claimed block polymer obvious. Applicants request that the rejection be withdrawn.

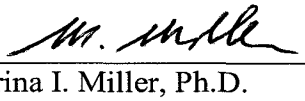
Claims 1-26 are provisionally rejected on the ground of non-statutory obviousness-type do8ble patenting over claims 1-10 of co-pending Appl. 10/549,574.

The rejection is provisional and is requested to be held in abeyance as the alleged conflicting claims have not been allowed (see MPEP 804). Also, if a "provisional" nonstatutory obviousness-type double patenting (ODP) rejection is the only rejection remaining in the earlier filed of the two pending applications, while the later-filed application is rejectable on other grounds, the examiner should withdraw that rejection and permit the earlier-filed application to issue as a patent without a terminal disclaimer. If the ODP rejection is the only rejection remaining in the later-filed application, while the earlier-filed application is rejectable on other grounds, a terminal disclaimer must be required in the later-filed application before the rejection can be withdrawn. *See* MPEP 804.I.B.1.

A Notice of Allowance for all pending claims is requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon



Marina I. Miller, Ph.D.
Registration No. 59,091

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 08/07)